



THE CLAIMS

1-12. (cancelled)

13. (currently amended) A zirconium-based alloy suitable for use in a corrosive environment where it is subjected to increased radiation, the alloy ~~including zirconium~~ having a quality and impurity level, including up to 1600 O ppm and up to 120 ppm Si, suitable for use in nuclear reactors, the alloy consisting essentially of:

0.65-1.6 percent by weight Nb;

0.3-0.6 percent by weight Fe;

0.65-0.85 percent by weight Sn;

0.0-0.20 percent by weight Ni;

0.0-0.60 percent by weight Cr; and

the balance being Zr.

14. (previously presented) The zirconium-based alloy according to claim 13, containing up to 0.2 percent by weight Ni.

15. (previously presented) The zirconium-based alloy according to claim 13, containing up to 0.6 percent by weight Cr.

16. (cancelled)

17. (previously presented) The zirconium-based alloy according to claim 13, wherein the alloy comprises a part of a component in a nuclear energy plant.

18. (previously presented) The zirconium-based alloy according to claim 17, wherein the component comprises a part of a fuel assembly.

1 19. (currently amended) A component in a nuclear energy plant, comprising:

2 a zirconium-based alloy according to claim 13 ~~consisting essentially of 0.65–1.6 percent~~
3 ~~by weight Nb, 0.3–0.6 percent by weight Fe, 0.65–0.85 percent by weight Sn, 0.0–0.20 percent by~~
4 ~~weight Ni, 0.0–.60 percent by weight Cr, and the balance being Zr.~~

1 20. (previously presented) The component according to claim 19, wherein the component
2 comprises a part of a fuel assembly.

1 21. (previously presented) The component according to claim 20, wherein the component
2 comprises a cladding tube for nuclear fuel.

1 22. (previously presented) The component according to claim 21, wherein at least a part of
2 an inner circumference of the component comprises a layer of a material that is more ductile than
3 the alloy.

1 23. (previously presented) The component according to claim 22, wherein the layer
2 comprises a zirconium-based alloy having a total content of alloying elements that does not
3 exceed 0.5 percent by weight.

1 24. (previously presented) The component according to claim 19, wherein the component
2 comprises a cladding tube for nuclear fuel.

1 25. (previously presented) The component according to claim 24, wherein at least a part of
2 an inner circumference of the component comprises a layer of a material that is more ductile than
3 the alloy.

1 26. (previously presented) The component according to claim 25, wherein the layer
2 comprises a zirconium-based alloy having a total content of alloying elements that does not
3 exceed 0.5 percent by weight.

1 27. (currently amended) A component for a nuclear energy plant, consisting essentially of a
2 zirconium-based alloy according to claim 13: ~~0.65-1.6 percent by weight Nb, 0.3-0.6 percent by~~
3 ~~weight Fe, 0.65-0.85 percent by weight Sn, 0.0-0.20 percent by weight Ni, 0.0-.60 percent by~~
4 ~~weight Cr, the balance being Zr, and having a substantially uniform composition throughout.~~

1 28. (previously presented) The component according to claim 27, containing up to 0.2
2 percent by weight Ni; and/or containing up to 0.6 percent by weight Cr.

1 29. (new) The zirconium-based alloy according to claim 13, including 50-120 ppm Si.

1 30. (new) The zirconium-based alloy according to claim 13, including 500-1600 ppm O.

1 31. (new) The zirconium-based alloy according to claim 13, wherein the amount of O is only
2 at a level that is the normal impurity level that results from the production of the alloy.

1 32. (new) The zirconium-based alloy according to claim 13, wherein the amount of Si is
2 only at a level that is the normal impurity level that results from the production of the alloy.

1 33. (new) The zirconium-based alloy according to claim 13, wherein the alloy includes no
2 Cr except for possibly a very small amount at the impurity level.

1 34. (new) The zirconium-based alloy according to claim 13, wherein the alloy includes no
2 Ni except for possibly a very amount at the impurity level.